

DEFORMED ABDOMINAL TERGITES IN
MUSCA DOMESTICA LINNAEUS

(Diptera: Muscidae)

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While examining the specimens of *Musca domestica* discarded from a genetical experiment being carried on by Mr. Wm. Cloughley of Stanford University, the author came upon a number of individual flies which exhibited abnormal developments of the abdominal tergites. Mr. Cloughley kindly consented to make further rearings of the strain in which a great number of individuals showed deformities of the third abdominal tergite. However, due to some unpredictable misfortunes this strain was lost before any conclusive data could be gathered. It is felt by the author that the nature of the abnormalities and the results which were obtained from the few successful crosses might be of interest, especially since similar developments have been noted in *Drosophila melanogaster* Meigen (Bridges and Morgan, 1911) and in *Calliphora erythrocephala* (Meigen) (Fraenkel and Harrison, 1938).

The abdominal deformities illustrated here are of specimens obtained during these rearing experiments. All drawings were made from the dorsal aspect. The retractable abdominal segments of the females are not shown in these illustrations and the terminal, under-curved, abdominal segments of the male are likewise omitted.

Figure 1A illustrates a female in which the third abdominal tergite is developed only on the right side. Figure 1B depicts a female in which both right and left sides of the third tergite are developed, but the central section is absent. Figure 1C is of a normal female. Figure 1D illustrates a female in which the fourth abdominal tergite formed only on the left. In this specimen there are additional deformities of the sixth and seventh abdominal segments. Figure 1E shows the abdomen of a male in which the third abdominal tergite is developed only on the right.

The examples shown in figures 1A, B, C and E were taken from a particular inbred strain. These illustrate all of the types of deformities noted in the progeny of this strain. The example depicted by Figure 1D illustrates a type of deformity found in two individuals of an entirely separate strain of flies originating from a different geographical locality.

The first cross, made after the discovery of the abnormalities of the third tergite type, was between two normal flies from this strain. This resulted in a total of 23 adult progeny, of which 17 per cent were deformed. The second cross, again made with normal flies from this stock, resulted in 5 per cent abnormal individuals. From these progeny five crosses were attempted between abnormal, normal with abnormal, and normal with normal flies. Only one of these, that of normal with normal, produced eggs. Several genera-

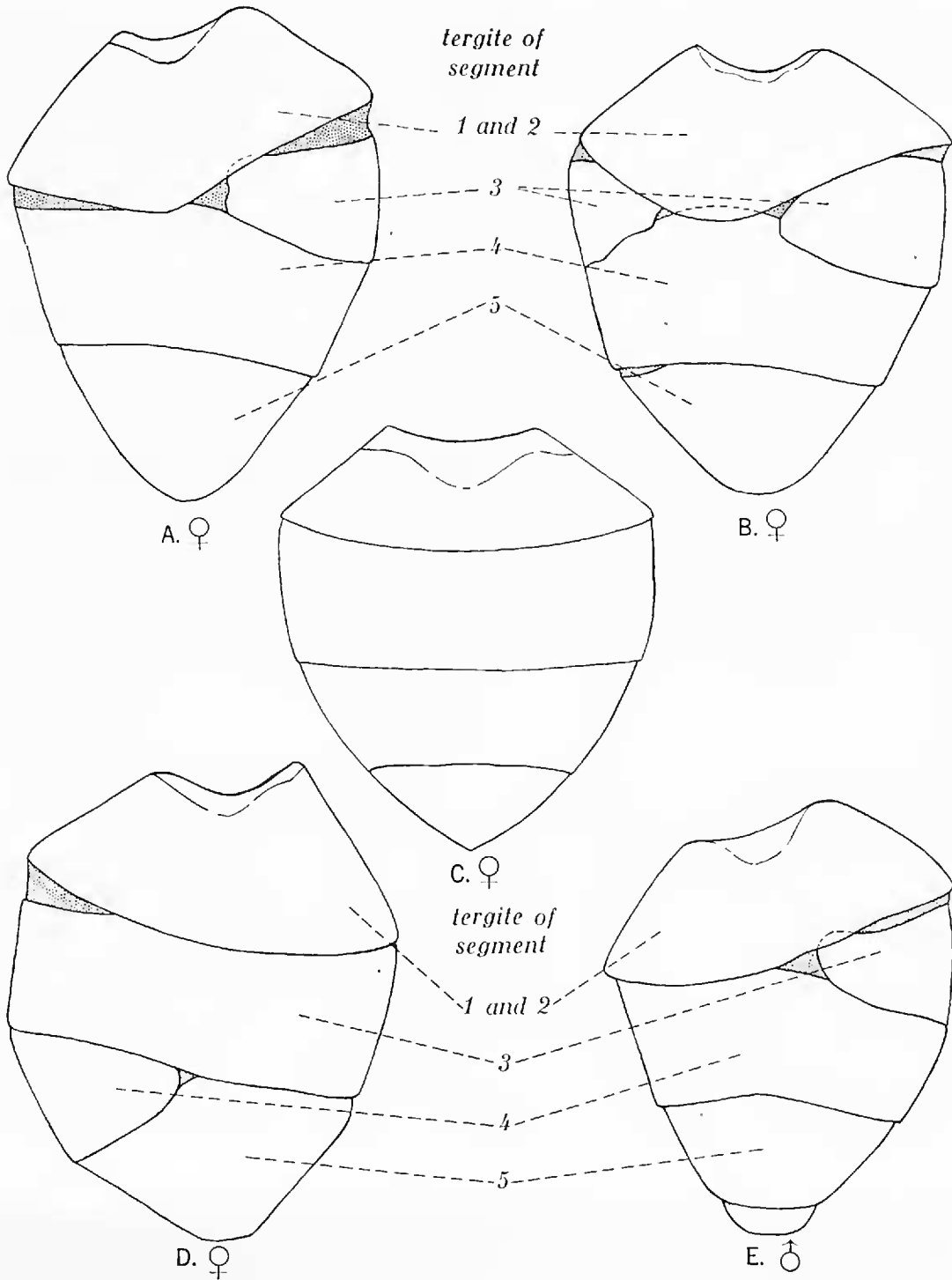


Fig. 1. *Musca domestica* Linnaeus, Abdomina, dorsal aspect.

tions later (because of the absence of the author the intervening progeny were not examined) counts were again made of progeny from a mass culture of this strain. This fairly large group of flies contained approximately 20 per cent deformed individuals. All of these were deformities of the third abdominal tergite of the types illustrated by figures 1A, B and E. In all of the progeny observed the deformities were slightly more common in the females than in the males, although there did not seem to be any significant difference in numbers.

It seems unlikely that this deformity was caused by an environmental factor such as deficient nutrition, as the flies of this strain and of other strains were reared under nearly identical conditions. Only this particular strain showed abnormalities of the third tergite and these appeared in more than six generations. However, due to the aforementioned circumstances no data were gathered definitely indicating the inheritable nature of this interesting development.

LITERATURE CITED

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1919. The second chromosome group of mutant characters. Carnegie Institute of Washington Publication No. 278, pages 123-304 and plate 11.

FRAENKEL, G., and HARRISON, J. L.

1938. Irregular abdomina in *Calliphora erythrocephala* (Mg.). Proceedings of the Royal Entomological Society of London, Series A, General Entomology, 13: 95-96, fig. 3.

ORTHEZIA ANNAE COCKERELL FOUND IN IDAHO.—The scale insect *Orthezia annae* Cockerell is known only from several widely scattered localities in the southwestern United States. It has been recorded from Presidio, Texas; Las Cruces, New Mexico; "Arizona"; Palm Springs, California; and Fallon, Nevada. During 1952 several collections, constituting a considerable northward extension of the known range of this species, were made in southeastern Idaho. Both adult females and nymphs of *O. annae* (determined by Harold Morrison) were collected in the vicinity of Malta, Cassia County, during March, July and September by G. Zappettini, L. A. Sharp and the writer. This scale was found on the roots of shadscale, *Atriplex confertifolia* (Torr.) and saltsage, *A. nuttalli* S. Wats. and was associated with an ant, *Campanotus vicinus* Mayr (determined by M. R. Smith). The coccinellid, *Brumus parvicollis* Casey was commonly encountered on shadscale plants, where it was observed feeding on *O. annae*.—W. F. BARR, University of Idaho, Moscow, Ida.